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THE LION KING

A NATURE FUN & LEARN SERIES

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Grapevine

Hi there!

The jungle postman has just arrived with a sack of your pictures and animal jokes. Fantastic! Your jokes give the Grapevine team the giggles. But please, please, please write your name and address on your letter or on the back of your picture. Otherwise I can't use it, even if it's the most brilliant in the entire world!

Kim

Write to:
Kim
Lion King and Friends
PO Box 1
Buntingford, ENGLAND

BEETLE BATTLE

A champion stag beetle throws his rival to the ground in the latest beetle heavyweight wrestling contest. The fight marks the start of the mating season. The two males are fighting over mating rights. The rivals battle on until one forces the other off his log, and the winner gets the female.



PRESS CARD
Sports Reporter
Cherob

PANDA PLANS

Life's looking up for China's wild pandas. There are plans for 14 more nature reserves. Special corridors will link them, so pandas in the new reserves can get together. That means they'll have a bigger choice of mates, which is good for breeding. At present China has just 13 reserves for pandas and they aren't linked. The plans were put together by the World Wide Fund for Nature and Chinese officials.



PRESS CARD
Environment Reporter
Cherob



Robert Wolbrook age 6

What do you get if you cross a kangaroo with an elephant?

Kangaroo

Hides all over



HOLED UP

A missing hombill has been found at last - holed up in a tree! Crocodile spotted her mate pushing fruit and insects into a hole in a tree. In fact, he was feeding Mrs Hombill. She was inside the tree, brooding eggs! She'd found a hole, and dosed the entrance with mud and droppings, leaving a tiny slit. "She'll break out when our chides are strong enough to leave the nest," said Mr Hombill. "Meanwhile I'm very busy pushing insects through to feed her and our growing family."



PRESS CARD
Crocodile
Cherob



Adnan Khan age 10



There are 6 hombills looking out of this magazine. Can you find them?

W
A
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OUT FOR

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SIMBA'S WORLD
Flamingos

All mud and motor
mouth Part 3



Praying mantis

Balancing act



Continents

Bug hunt



Wake up call



RAIN REMEMBERS

Why monkeys keep out
of the way



FREE IN PART 15

Super stickers for your
Animal Greats album



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SIMBA'S WORLD

FOR MANY HOURS EACH DAY, THESE LONG-LEGGED BIRDS STAND IN SODA LAKES. THE WATER IS SO HARSH THAT IF WE HUMANS STEPPED INTO IT, OUR SKIN WOULD PEEL OFF. YET THE FLAMINGOS LIVE THERE IN HUGE FLOCKS.

Flamingos

Flamingos live around freshwater, salt or soda lakes in Africa. There are two kinds in Africa – the greater and the lesser flamingo. Both have a long neck and extremely long legs. They also have a big, strong beak that curves downwards. You can tell them apart by their size, colour and beak shape.

The greater flamingo is about 127cm long and has pink-tinged body feathers, reddish feathers on the back and black

flight feathers. The curved beak is deep pink with a black tip and its legs are pink too. The lower half of the beak bulges out close to the throat.

The lesser flamingo, which is quite a bit smaller, has a reddish black beak which curves smoothly down to its black tip. Its body feathers are pinker and its legs are reddish.

These flamingos get their beautiful pink colouring from the food they eat.

▼SIDE BY SIDE
Because of their feeding habits, greater and lesser flamingos can share the same stretch of water without causing each other a problem. Greater filter out insect larvae and shrimps in shallow water. Lesser filter the sludge for algae.



Photo by J. J. J.

NURSERIES AND CRECHES

Flamingos nest together in huge colonies. They build pillar-shaped nests out of mud. They make a hollow in the top and lay a single, white egg. The parents take turns to incubate it for about a month. When the chick hatches it is covered in grey down and has a straight beak. The parents feed it on liquid food, called crop milk, which they cough up.

When the chick is about a week old, the parents take it to join thousands of other youngsters of about the same age. The chicks stay together, in a huge creche, for ten weeks or more.

▼CHICKS ALONE
The parents often leave the fluffy gray chicks in order to find food at another lake. When they return to the creche, each parent recognizes its own chick by its call.

►STANDING GUARD
This greater flamingo is guarding its newborn chick in its mud nest. Nests are often built on islands, out of reach of land predators like hyenas.



Photo by J. J. J.



RIBBON OF PINK
A huge flock of lesser flamingos makes a startling pink pattern as the birds fly over Kenya's Lake Nakuru.

FACT FILE

GREATER FLAMINGO

Phoenicopterus ruber

SIZE: The male and female are about 127cm long.

RANGE: They live in freshwater and salt lakes and estuaries in north-west, southern and east Africa.

DIET: Insect larvae, crustaceans, molluscs and worms.

YOUNG: One chick.

LESSER FLAMINGO

Phoenicopterus minor

SIZE: The male and female are about 100cm long.

RANGE: They live in freshwater and salt lakes and estuaries mainly in southern and eastern Africa.

DIET: Algae and other minute organisms.

YOUNG: One chick.

FILTER FEEDERS

Many of Africa's lesser flamingos live in the sweltering soda lakes of the Great Rift Valley in Kenya and Tanzania. One of the main advantages of living in such a difficult environment is that they do not have to compete with many other animals for food and space. Also, there are fewer predators around.

To cope with this harsh habitat, the flamingos have particularly tough skin on their legs. They also have tough, horny beaks which are extremely efficient at filtering out the minute organisms that live in the water. When the flamingos bend down to feed, they submerge their curved beaks and swing them in a semi-circle through the water. Tiny algae and other organisms are sucked in and trapped by a filter of hairs inside the beak.

WOW!

The greater flamingo, sweeping through the muddy bed of a lake with its large beak, can eat up to 50,000 insect larvae a day.

► **TUCKED UP**
Flamingos rest, during the day and night, by standing in shallow water and tucking their beaks into their wings.

► **HEADS DOWN**
Lesser flamingos wade through the water, their beaks upended, filtering minute bits of food from the top 4cm of the water.



SIMBA SAYS

Flamingos are a bit of a mystery to us plain animals. When we lions find a meal, we stick at it until there's hardly a scrap left. But flamingos sometimes desert their food for no good reason, as far as we can see. One moment, thousands of them will be busily feeding away on a lake that's stuffed full of those tiny creatures they eat. The next, they take off - all of them - and disappear. Weird!



The lesser flamingo's beak is equipped with two sieves. On the outer edges, there is a fringe of horny plates that filters out the larger, unsuitable bits of food. Inside the beak is another fringe of tiny hairs called lamellae. They trap the fine pieces of food that the flamingo likes.

As it feeds, the flamingo draws back its tongue so that water is sucked in through the horny plates. Then it closes its beak and the microscopic food sticks to the lamellae. Next, the bird forces out the sieved water by shooting its tongue forwards. Finally it swallows the bits of food that have been trapped by the fringe of hairs.

A DAY ON THE WATER

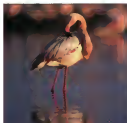
Flamingos seem to feel safer travelling and feeding in large groups of a hundred or more. At Lake Bogoria in Kenya up to 1.7 million of them gather at certain times of the year.

They start feeding at dawn, when the water is still. Then, as the heat builds up, they come ashore to look for fresh water to drink. In the middle of the day they rest in the water, some of them tucking their beaks into their wings to sleep. Later on, they feed again and then move into fresh water to bathe. They wait until the cool of the evening to fly from one stretch of water to another.



FRESHWATER BATH

Flamingos submerge their head and body in fresh water to get rid of dirt and salts. Then they flap their wings to shake off the water and (shown below) comb the feathers into place with their beak.



WASH AND COMB

Every day, flamingos immerse themselves in fresh water and then preen their feathers thoroughly. This is a very important part of their daily routine because, unlike many European birds, flamingos do not moult twice a year. In fact, they usually only moult once every two years or so. Daily cleaning and preening helps to keep their flight feathers in top condition.

**HAKUNA
MATATA**
NO WORRIES

When it came to finding food, Timon's taste was for things small and wriggly. That's why he was hungrily hunting insects by the riverside, after a testing time riding floodwater rapids. But unbeknown to him, something big and wriggly had decided 'meerkat' was on the menu.

"Jussa a little closser!" came a horrible hiss.

Timon was so busy he didn't hear it at first. He didn't see the sinister shape sliding along a branch above him, either. This was no ordinary little snake. If it had been, it might well have felt Timon's sharp teeth on the back of its neck. For the quick-moving meerkat didn't altogether dislike the taste of a small serpent snack. The problem was that the hunter silently stalking Timon was nothing less than a powerful python, with crushing coils.

Unaware of the deadly danger, Timon turned to see Pumbaa, the mud-mad warthog, wallowing in revolting riverside ooze.

Chance had brought both animals together on a makeshift raft. The

meerkat's motor mouth had left Pumbaa's head pounding, while Timon's nose had protested at the strong, unsavoury scent of the warthog. At last, Pumbaa and Timon were about to part company.

"Is this bliss!" shrieked Pumbaa, for once making more noise than Timon. "You don't know what you're missing, young meerkat!"

"Only a mug needs mud for entertainment!" came Timon's rapid reply. "The jungle's full of good, clean fun!"

Timon idly glanced up and saw some vines trailing from a thick tangle of

trees. Among them, hanging by its tail, the python had lithely lowered itself towards the meerkat. But the great snake froze and remained undetected.

"Hey, Pumbaa! Watch me do my thing and swing!" teased Timon.

Stretching his hind legs, he jumped up and caught hold of the nearest looped vine. Then he swung from it to another.

"So long, bacon brain!" the meerkat called to Pumbaa. "I'll take off and get me a bite elsewhere!"

While Timon spoke, he watched the warthog 'Look before you leap' goes the old saying. If Timon had done so, he would have seen why one jungle vine was so much thicker than the rest. No sooner had Timon taken hold of it than he realised his terrible mistake.

It was, in fact, the patterned body of the python. The snake twisted its head to stare hypnotically at Timon. For a split second, the meerkat was too stunned to let go. When he did, he landed in a thorny thicket and struggled frantically to free himself. Meanwhile, the python speedily slithered to the ground.

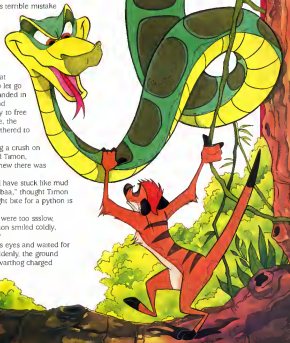
"Don't go getting a crush on me, pal!" protested Timon, bravely – but he knew there was no escape.

"Maybe I should have stuck like mud to that pongy Pumbaa," thought Timon. "Ending up as a light bite for a python is hard to swallow!"

"It seems as you were too ssslow, meerkat!" the python smiled coldly, moving ever closer.

Timon closed his eyes and waited for the worst. But, suddenly, the ground shuddered as the warthog charged.

All mud and motor mouth Part 3



"Here comes the cavalry!" he hollered, hurtling towards the snake. Pumba's front trotters trapped its tail. The python rapidly recoiled, hissing in pain. In the same split second, Pumba used his two formidable tusks to toss the snake skywards.

"Take off, you outsized worm!" he snorted.

Timon could hardly believe his luck or the fact that the well-padded, mud-caked warthog could move so quickly. "Gee, Pumbaa," began Timon, painfully pulling thorns from himself. "I don't know what to say!"

"Don't bother! It's quieter if you don't say anything!" joked

Pumbaa. "But you should be more choosy about the company you hang out with!"

"Hang! Yeah! Ha-ha-ha!" giggled the relieved meerkat. "Good of you to drop in, too, Pongbaa!"

For a moment, the warthog's eyes flashed angrily.

"Oops! I mean, Pumbaa!" Timon gave a sickly grin. "You're an OK all-heart sort of hog! Maybe teaming up with you wouldn't be so bad!"

Pumbaa turned his warty nose up. "No way!" he snapped, trotting off. "Saving your skin's one thing. But stomaching your non-stop tongue is another!"

Timon chased after Pumbaa. "Maybe I can talk you into it!" he called.

The meerkat was still trying to talk Pumbaa into it as the warthog wearily spotted a waterhole, refilled by the recent rains. The ground round it was wonderfully soft.

"There's only one thing I need right now," Pumbaa interrupted Timon.

The meerkat didn't need telling. Pumbaa was soon rolling about in thick, sticky mud. Then he lay still and, looking just like a mound of mud himself, Pumbaa fell fast asleep.

"OK! I gave that guy my best shot!" fumed Timon, standing close by. "If he wants to go it alone, hakuna matata - no worries!"

The meerkat turned to walk away from the waterhole. It was then that he noticed a huge bulk, with a mighty, horned head, moving closer. The rhinoceros, like Pumbaa, loved wallowing in mud. Among the mightiest of animals in the African wilderness, the rhino feared nothing and had a nasty habit of charging anyone who got in his way.

"Pumbaa!" whispered Timon, worriedly.

The warthog lay as still as stone. Every muscle in the meerkat warned him to run. But what about Pumbaa? What if the mega-sized newcomer should stumble on - or even over - the warthog?

"No contest," thought Timon. "I've got to wake that slumbering side of bacon and fast!"

The meerkat saw two flat stones and had an idea.

"With luck, I'll get Pumbaa up and running in one go!" he said.

Timon held a stone either side of

Pumbaa's tail tip. Then he slammed them together with a WHUMP! The warthog woke and, at the same time, was stung into action.

Pumbaa raced off seconds before the rhino arrived. Timon

clung to Pumbaa's back like a rodeo rider.

"What did you do that for?" Pumbaa fumed at Timon when they finally stopped.

The meerkat pointed to the huge, horned heavyweight occupying the water hole. Pumbaa gasped in grateful relief.

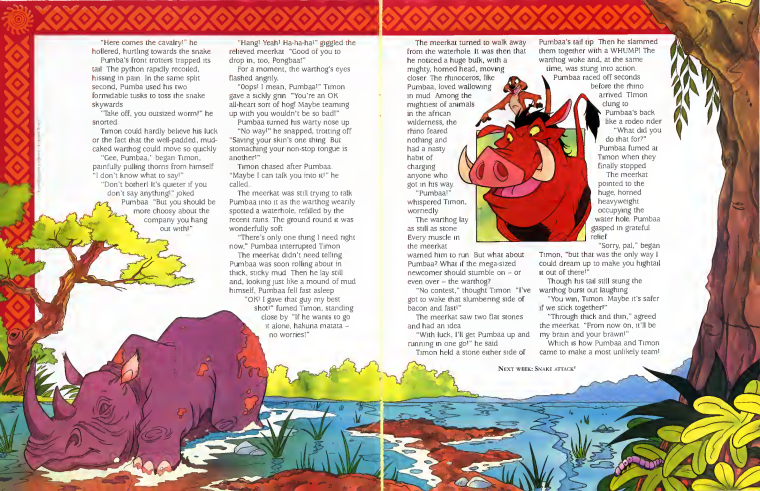
"Sorry, pal," began Timon, "but that was the only way I could dream up to make you hightail it out of there!"

Though his tail still stung the warthog burst out laughing. "You win, Timon. Maybe it's safer if we stick together!"

"Through thick and thin," agreed the meerkat. "From now on, it'll be my brain and your brawn!"

Which is how Pumbaa and Timon came to make a most unlikely team!

NEXT WEEK: SNAKE ATTACK!





CONTINENTS

A VERY LARGE AREA OF LAND THAT'S MORE OR LESS SURROUNDED BY WATER IS CALLED A CONTINENT. THERE ARE SEVEN CONTINENTS IN THE WORLD TODAY. BUT ONCE UPON A TIME, THINGS LOOKED QUITE DIFFERENT.

Changing sea levels affects continents, too. When sea levels rise, the edges of the continents can be drowned. When they drop, more land appears.

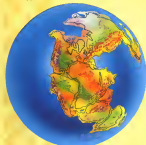
Thousands of millions of years ago, Earth was a spinning ball of runny rock. The surface rock cooled and formed a crust. Volcanoes erupted, rain fell, and the early seas and continents formed. The continents have been moving and changing ever since.



Today, Australia is the smallest continent and Asia is the biggest. Asia is separated from Europe by an imaginary line running along the Ural mountains. Some people say Asia and Europe are really just one continent, called Eurasia – so they say there are only six continents.



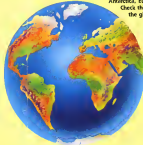
THE SEVEN CONTINENTS
The seven continents are Asia, Africa, North America, South America, Antarctica, Europe and Australia. Check their positions on the globes on the right.



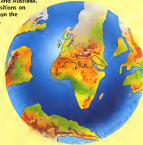
200 MILLION YEARS AGO
All the land was joined up in one huge supercontinent called Pangaea. But it didn't stay like that for long.



100 MILLION YEARS AGO
Pangaea had split up into several smaller continents. They drifted apart like massive floating logs.

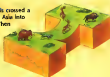


TODAY
This is how the continents look now. They are still moving – for example, every year, North America moves 2cm further away from Europe.

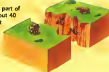


THE FUTURE?
Scientists think this is how the world could look 150 million years in the future.

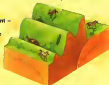
Prehistoric animals crossed a land bridge from Asia into North America. Then the sea level rose, drowning the land bridge.



Australia was once part of Antarctica. But about 40 million years ago it split off and floated away on its own.



India was a separate continent – until it hit Asia. The crash crumpled up the rocks at the top, making the Himalayan mountains. Every year they are pushed a bit higher.





"Continents floating
around like logs?
You're kidding me!"

"But there's proof.
Something about
jigsaw puzzles and
things called fossils."

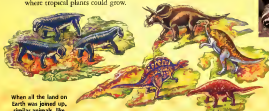


It's hard to believe that the huge, solid
continents can drift around. So why does
Pumbaa believe it?

Look at the east side of South
America and the west coast of Africa.
They fit together rather neatly – just
like matching pieces in a giant
jigsaw puzzle! And lots of the rocks
and mountains match up, too –
even though they are now separated
by a huge ocean.

Where early animals lived is also
a reason for thinking that
continents move around. Fossils of
the reptile *Lystrosaurus* have been
found in Australia, Africa, Asia and
Antarctica. So these continents
must once have been joined – the
animal couldn't have swum across
the big seas that separate them now.

Plants back up the idea, too.
Scientists have found fossils of tropical
ferns under deep ice in northern lands.
This suggests that these cold countries
were once in hot parts of the world
where tropical plants could grow.



When all the land on
earth was joined up,
similar animals, like
the pig-like reptile
Lystrosaurus, spread
all over Pangaea.

After Pangaea split up,
different dinosaurs evolved
on the different continents.



POCKET PROOF
Koalas live only in
Australia. It split off on
its own so long ago that
unique animals have
evolved there.



South America
and Africa fit
together like
pieces in a giant
jigsaw.



STRIPY LINK
South American
and Asian tapirs
have different
coats but both
have stripy babies.
They descend
from tapirs that
lived when the
lands were linked.

A FOSSIL FACT
Fossils show that the ginkgo
tree grew in many parts of
Pangaea. Today it only grows
wild in China.



Fossils of tropical
ferns like this
glossopteris have
been found all over
the world – even in
places which are now
in the frozen north.

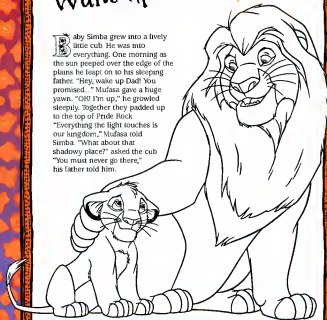
THE LION KING COLOUR IT IN



Wake up call



Baby Simba grew into a lively
little cub. He was into
everything. One morning as
the sun peeped over the edge of the
plains he leapt on to his sleeping
father. "Hey, wake up Dad! You
promised..." Mufasa gave a huge
yawn. "OK! I'm up," he growled
sleepily. Together they padded up
to the top of Pride Rock.
"Everything the light touches is
our kingdom," Mufasa told
Simba. "What about that cub
shadowy place?" asked the cub
"You must never go there,"
his father told him.



ZAZU'S

MAKE & DO

Balancing acts

YOU WILL NEED

polystyrene cup
stiff card
glass-headed pin
cotton thread and
blunt needle
2 drinking straws

Can you balance a bulky hog with a lean lion? Could the weight of a mere meerkat make any difference at all? Set up these balancing acts to find out.



- 1 Trace the pictures of Pumbaa, Simba, Timon and the log on to paper. Stick them to card, colour in and cut out.

- 2 Use the pin to make a hole through the cross in each card. Cut two 20cm lengths of cotton. Thread the cotton on to a blunt needle and make loops big enough to pass over the end of the log.

- 3 Press a walnut-sized piece of modelling clay into the bottom of a polystyrene cup to make it stable. Push a pin through the cross in the log and into the cup. Leave some pin sticking out so the log turns easily.



- 4 Set the cup on the edge of a table. Pass Simba's loop over one end of the log so he hangs from it.



- 5 Hold Simba's end of the log and loop Pumbaa over the other end. Put your finger on top of Simba's end of the log. If you take it away, what happens?



- 6 Find the spot on the log where Pumbaa balances Simba. Move Pumbaa towards the pin a bit at a time. What happens if you go past the spot? Can you think of another way to make them balance?



HOW IT WORKS

See-saw experiment

Pumbaa's card weighs more than Simba's. When you put Pumbaa and Simba at the ends of the log – an equal distance from the pin – Pumbaa's end goes down. By moving Pumbaa towards the pin you find the spot where he balances with Simba. Pumbaa still weighs the same but his weight is less able to turn the log. Another way to make them balance is to leave Pumbaa at the end of the log and move the pin closer to Pumbaa.



Two-straw mobile



- 1 Remove the loops from Pumbaa and Simba. Hold a straw upright and thread 30cm of cotton right through. (If you find this difficult, thread a needle and drop it through.)



- 3 Thread 30cm of cotton through the second straw. Tie Simba to one end and Timon to the other end.



- 2 Tie the second straw to one end of the cotton. Then tie Pumbaa to the other end.

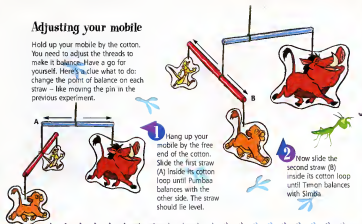


- 4 Finally, tie a length of cotton to the middle of the first straw so you can hang up your mobile.



Adjusting your mobile

Hold up your mobile by the cotton. You need to adjust the threads to make it balance. Have a go for yourself. Here's a clue what to do: change the point of balance on each straw – like moving the pin in the previous experiment.



Balancing cork

Amaze your friends and confound your enemies by balancing a cork on the edge of a glass.

- 1** First challenge someone to try to balance a cork on the edge of a glass. (If they manage it, congratulate them and find someone who can't.)
- 2** Now show them how. Take two forks and push them into the cork about half way up and at the angle shown. Carefully rest the cork on the edge of the glass, then let the forks come to rest. The cork should balance!



HOW IT WORKS

Hang it

Think of the cork's weight as being concentrated at a point in its middle. To balance the cork by itself, this point has to be directly over the rim of the glass. But the rim is thin and the point so small, that it's almost impossible. By pushing forks into the cork, the point where the weight is concentrated is shifted below the rim of the glass. Rather than balancing on top of the rim, the cork and forks are actually hanging from it.



FOAMY HOME

The female praying mantis has a clever way of giving her young a good start in life: she parcels them up in foam.

A female praying mantis sits on a branch, waiting for sunset. She is ready to lay her eggs but won't start until it is fully dark when she will be less visible to predators.

At last it is night and she begins to pour out a sticky liquid from her body. The liquid, which contains up to 400 eggs, turns into foam as it

meets the air and spreads along the branch in a mound. The foam hardens quickly and soon the eggs are completely sealed in a tough case. This protects them from drying out and from becoming diseased as they grow.

The young take up to six months to develop in their sealed cocoon.



When the baby mantises break out of their foamy cocoon, they are only 6mm long. They can look after themselves straight away and crawl off to start hunting for their first meal.



MORE PUZZLES

PUMBA SAYS...

All the shapes round the page join together in a line to spell something Pumbaa is fond of saying. Can you work it out? There's a clue to start you off - the first letter has a straight left-hand edge.

WHAT COLOUR BUG
Can you work out the colour of the bug hidden by the leaf by looking at the other bugs?

HOW MANY WORDS CAN YOU
MAKE OUT OF

HAKUNA MATATA

SNAIL TRAIL

Only one of these slither trails was made by the snail. Can you work out which one?

Shenzi "Did you hear about the wasp who wanted to go on the stage? She wanted to be in show-business!"



RAFIKI REMEMBERS

WHY MONKEYS KEEP OUT OF THE WAY.

"WE ALL KNOW THAT MONKEYS LIKE TO STAY UP IN THE TREES. PERHAPS THEY ARE KEEPING OUT OF THE WAY UP THERE - BUT OUT OF WHOSE WAY AND WHY?"

It was a hot day. Serval, a member of the wild cat family, was exhausted from hunting and lay down in the long grass in the shade of a tree. But the fleas kept biting her and she could not rest.

By and by a monkey came past and Serval said wearily, "Monkey, please help me and pick out the fleas that are bothering me. Then perhaps I can get some rest."

Monkey was quite happy to do this

for Serval and, while he was busy, the tired Serval fell fast asleep. Monkey watched her and then a mischievous grin spread over his face.

"I'll tie her tail to this tree," he giggled to himself. "Won't she get a fright when she wakes up - ho! ho! ho!" With that, he ran away.

Serval eventually awoke and tried to get up but could not. She struggled and struggled in vain to reach round the tree and untie her tail.

